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was required to do laboratory work, and to prepare himself his material and apparatus, to give each day during the course an extemporaneous lecture, illustrated by experiments, and full explanation of the phenomena and the laws governing them. Every student was well grounded in the principles and elements of the science, and by a method of teaching never surpassed, if ever equalled, by any other."

WILLIAM P. MASON.

Troy, N.Y., July 29.

AMONG THE PUBLISHERS.

THE ninth annual issue of "The Year-Book of the Scientific and Learned Societies of Great Britain and Ireland" has recently been issued by Charles Griffin & Co., Exeter Street, Strand, London. The present issue gives a well-edited chronicle of the work done during the past year by the learned societies of Great Britain and Ireland, together with lists of the officers and a brief statement of the history and purposes of the organizations. The lists of the papers are quite complete, most of the society secretaries having given the needed information, and make a showing of scientific and literary activity with which we have as yet but little to compare in America. The hand-book is well made for its purpose, and would prove an excellent book of reference in American libraries.

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For information address Mr. FRITZ RUHL, President of the Societas Entomologica, Zurich-Hottingen, Switzerland.

NEO-DARWINISM AND NEO-LAMARCKISM.

By LESTER F. WARD.

Annual address of the President of the Biological Society of Washington delivered Jan. 24, 1891. A historical and critical review of modern scientific thought relative to heredity, and especially to the problem of the transmission of acquired characters. The following are the several heads involved in the discussion: Status of the Problem. Lamarckism. Darwinism. Acquired Characters. Theories of Heredity. Views of Mr. Galton. Teachings of Professor Weismann. A Critique of Weismann. Neo-Darwinism. Neo-Lamarckism. The American "School." Application to the Human Race. In so far as views are expressed they are in the main in line with the general current of American thought, and opposed to the extreme doctrine of the non-transmissibility of acquired characters.

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To exchange Wright's "Ice Age in North America" and Le Conte's "Elements of Geology" (Copyright 1882) for "Darwinism," by A. R. Wallace, "Origin of Species," by Darwin, "Descent of Man," by Darwin, "Man's Place in Nature," Huxley, "Mental Evolution in Animals," by Romanes, "Pre-Adamites," by Winchell. No books wanted except latest editions, and books in good condition. C. S. Brown, Jr., Vanderbilt University, Nashville, Tenn.

—A vigorous statement of the scientific principles upon which the treatment of criminals should be based will open *The Popular Science Monthly* for August. It is by Professor Edward S. Morse, who takes as his title "Natural Selection and Crime." The Warfare of Science papers, by Dr. Andrew D. White, will be continued with a chapter on "Geography," in which are given the various mythological and theological ideas concerning the form of the earth and the proper mode of representing it that have prevailed in ancient and mediæval times. "The Manufacture of Boots and Shoes" will be described by George A. Rich. This is one of the illustrated series of Articles on American Industries, and, in both the text and the pictures, tells a story of wonderful progress. An ethical study on "Veracity," by Herbert Spencer, will be among the contents.

—The Geographical Society of Germany will shortly publish a volume commemorative of the four-hundredth anniversary of the discovery of America by Columbus, which will, it is said, be one of the most elaborate publications ever issued by the society. Dr. Konrad Kretschmer, the editor of the forthcoming work, has visited all the principal libraries of Italy in search of material, and has had access to many rare manuscripts hitherto unused. The memorial volume will contain forty five maps relating to the discovery of America, thirty-one of which are said to have never been published. Emperor William has contributed 15,000 marks

Wants.

Any person seeking a position for which he is qualified by his scientific attainments, or any person seeking some one to fill a position of his character, be it that of a teacher of science, a draughtsman, or what not, may have it inserted under this head FREE OF COST, if he satisfies the publisher of the suitable character of his application. Any person seeking information on any scientific question, the address of any scientific man, or who can in any way use this column for a purpose consonant with the nature of the paper, is cordially invited to do so.

A JOHNS HOPKINS graduate (1892) desires a position as instructor in mathematics and physics. Address A. B. TURNER, Johns Hopkins University, Baltimore, Md.

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towards the expenses of publication, etc., and the work will undoubtedly be a most valuable contribution to the early history of America. It is expected that it will leave the government printing office early in August.

—In a capital address on "tooth culture," delivered at the annual meeting of the Eastern Counties Branch of the British Dental Association, and printed in *Lancet*, Sir James Crichton-Browne referred to a change which has taken place in bread, as one of the causes of the increase of dental caries. So far as England is concerned, this is essentially an age of white bread and fine flour, and it is an age therefore in which we are no longer partaking, to anything like the same amount that our ancestors did, of the bran or husky parts of wheat, and so are deprived to a large degree of a chemical element which they contain—namely, fluorine. The late Dr. George Wilson showed that fluorine is more widely distributed in nature than was before his time supposed, but still, as he pointed out, it is but sparingly present where it does occur, and

the only channels by which it can apparently find its way into the animal economy are through the siliceous stems of grasses and the outer husks of grain, in which it exists in comparative abundance. Analysis has proved that the enamel of the teeth contains more fluorine, in the form of fluoride of calcium, than any other part of the body, and fluorine might, indeed, be regarded as the characteristic chemical constituent of this structure, the hardest of all animal tissue, and containing 95.5 per cent of salts, against 72 per cent in the dentine. As this is so, it is clear that a supply of fluorine, while the development of the teeth is proceeding, is essential to the proper formation of the enamel, and that any deficiency in this respect must result in thin and inferior enamel. Sir James Crichton-Browne thinks it well worthy of consideration whether the reintroduction into our diet of a supply of fluorine in some suitable natural form—and what form, he asks, can be more suitable than that in which it exists in the pellicles of our grain stuffs?—might not do something to fortify the teeth of the next generation.

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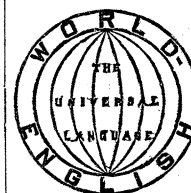
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Anthropology, Current Notes on.
Architectural Exhibition in Brooklyn.
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Artesian Wells in Iowa.
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Chalicotherium, The Ancestry of.
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Eyes, Relations of the Motor Muscles of, to Certain Facial Expressions.
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Fishes, The Distribution of.
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Tiger, A New Sabre-Toothed, from Kansas.
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Trachea of Insects, Structure of.
Vein-Formation, Valuable Experiments in.
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Wind-Storms and Trees.
Wines, The Sophisticated French.
Zoology in the Public Schools of Washington, D. C.

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